

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Appeal No: _____
	:	
Kazuhide MIZUTANI et al.	:	Patent Art Unit: 3744
	:	
Serial No.: 10/521,020	:	Examiner: Mohammad M. Ali
	:	
Filed: January 12, 2005	:	<b>Confirmation No. 9469</b>
	:	
For: REFRIGERANT PIPE WASHING	:	
METHOD, AIR CONDITIONER UPDATING :	:	
METHOD, AND AIR CONDITIONER	:	

THE ASSISTANT COMMISSIONER FOR PATENTS

Sir:

Transmitted herewith is Appellant's Appeal Brief for the above-identified application.

The items checked below are appropriate:

[X] The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No.: 50-1836.

[X] The amount of \$540.00 for Appeal Brief fee (37 CFR 1.17(f)).

[X] Any additional excess claim fees under 37 CFR 1.16.

[X] Any additional patent application processing fees under 37 CFR 1.17.

Dated: November 18, 2010

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Case Docket No.: DK-US030061

PATENT

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APPEAL BRIEF

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**APPEAL BRIEF**

Commissioner of Patents  
United States Patent and Trademark Office  
Washington, D.C. 20231

Sir:

For the appeal to the Board of Patent Appeals and Interferences from the decision dated June 29, 2010 of the Examiner rejecting claims 5-7, 11 and 12, Applicants-Appellants submit the following brief in accordance with 37 C.F.R. §41.37.

In view of the following analysis of claims 5-7, 11 and 12, Appellants believe that the unique arrangements of these claims are not disclosed or suggested in the references cited in the Office Action, either alone or in combination. Thus, Appellants respectfully request that the rejections of claims 5-7, 11 and 12 be reversed, and that claims 5-7, 11 and 12 be allowed.

If there are any questions regarding this Brief, please feel free to contact the undersigned.

***1. Real Party in Interest***

Daikin Industries, Ltd. is the owner in the above-identified patent application. Thus, the real party in interest is Daikin Industries, Ltd.

## ***2. Related Appeals and Interferences***

Appellants and Appellants' legal representatives believe there are no appeals and/or interferences related to this appeal.

### *3. Status of Claims*

Claims 5-7, 11 and 12 are presently pending in this application, with claims 7 and 11 being the independent claims. Claims 1-4 and 8-10 have been previously cancelled. All of the pending claims 5-7, 11 and 12 are rejected in the June 29, 2010 non-final Office Action. None of the pending claims 5-7, 11 and 12 are withdrawn from consideration. None of the pending claims 5-7, 11 and 12 are objected to.

Claim 7 stands rejected under 35 U.S.C. §102(a) as being anticipated by Japanese Patent Publication No. 2002-357377 (Unezaki) and under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,806,329 (Taira).

Claims 5, 6, 11 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Unezaki in view of U.S. Patent No. 5,495,057 (Nam). Claims 5, 6, 11 and 12 also stand rejected as being unpatentable over Taira in view of Nam.

The rejected claims 5-7, 11 and 12 are the claims on Appeal.

#### ***4. Status of Amendments***

All amendments submitted in the above-identified application prior to the June 29, 2010 non-final Office Action (hereinafter "the Office Action") have been entered. No Amendments have been presented after the Office Action.



### ***5. Summary of the Claimed Subject Matter***

The presently claimed subject matter is generally directed to updating an air conditioner. See page 4, lines 1-6. An HFC refrigerant containing at least 40 wt % of R32 but containing no R134a is used in a refurbished air conditioning system containing parts (existing refrigerant piping, for example) that were utilized with a mineral oil based refrigerant oil. See page 4, lines 7-16. In addition, a new heat source and a new user unit are connected together by the existing refrigerant piping, with the HFC refrigerant disposed therein. See page 12, line 24, to page 13, line 3. When refurbishing (updating) an air conditioner, the former refrigerants that are now considered ozone-destructive are typically replaced with an HFC refrigerant. See page 1, lines 8-14. The old refrigerant oil is incompatible with the new HFC refrigerant and will act as a contaminant, and thus the old refrigerant oil must be washed out before the update is complete. See page 2, lines 8-11. The structure and method described by the independent claims of this application are believed to describe a solution to updating air conditioners which is more efficient and economic than the solutions presented by the prior art. See page 2, line 20, to page 4, line 6.

#### **Independent claim 7**

The refurbished air conditioner of claim 7 includes existing refrigerant piping (6, 7), a new heat source unit (102), a new user unit (105), and an oil collecting device (127). See page 12, line 24, to page 13, line 3, page 13, lines 21-22, and Figure 2. The existing refrigerant piping (6, 7) was used with an existing air conditioner (1) composed of an old heat source unit (2) and an old user unit (5), and contains residue of an existing mineral-oil-based refrigerant oil. See page 12, lines 16-21. The existing refrigerant piping (6, 7) is connected to the old heat source unit (2) and the old user unit (5), and is reused as is when the updating of the air conditioner (1) is complete. See page 12, line 24, to page 13, line 3.

The new heat source unit (102) and the new user unit (105) are connected together by the existing refrigerant piping (6, 7) with a replaced working refrigerant disposed therein. See page 12, line 24, to page 13, line 3. The new heat source unit (102) and the new user unit (105) replace the old heat source unit (2) and the old user unit (5) when the updating of the air conditioner (1) is complete. See page 12, line 24, to page 13, line 3.

The oil collecting device (127) is configured such that, after the existing refrigerant oil has been changed and before the refurbished air conditioner (1) is run in a normal operating mode, the oil collecting device (127) can draw in the replaced working refrigerant that is being circulated through the air condition (1) and separate the existing refrigerant oil that is carried with the replaced working refrigerant. See page 14, lines 7-20. The oil collecting device (127) is disposed in the new heat source unit (102) and includes an oil collecting container (131), an inlet pipe (132), an inlet valve (132a), and an outlet pipe (133) therein. See page 14, lines 4-6. The replaced working refrigerant is an HFC refrigerant containing at least 40 wt% of R32 that serves as a cleaning agent but containing no R134a refrigerant. See page 19, lines 15-20.

#### Independent claim 11

The air conditioner updating method of claim 11 includes first, second, third and fourth steps. The first step is that of recovering a working refrigerant containing an existing mineral-oil-based refrigerant oil from an existing air conditioner (1). See page 13, lines 21-25. The second step is that of replacing selected old equipment (2, 5) constituting at least a portion of the existing air conditioner (1) including an old heat source unit (2) and an old user unit (5), while reusing as is at least a portion of existing refrigerant piping (6, 7) of the existing air conditioner (1) when the updating of the air conditioner (1) is complete. See page 12, line 24, to page 13, line 3, and Figure 1. In this second step (which is executed after the

first step), the existing refrigerant piping (6, 7) is connected to a new heat source unit (102), an oil collecting device (127), and a new user unit (105), the oil collecting device (127) being disposed in the new heat source unit (102) when the updating of the air conditioner (1) is complete. See page 12, line 24, to page 13, line 3, page 14, lines 1-6, and Figure 2.

The third step, executed after the second, is that of charging the existing air conditioner (1) which is connected to the new heat source unit (102) and the oil collecting device (127) with the existing refrigerant piping (6, 7) since the second step and that has the equipment updated with a new working refrigerant that serves as a cleaning agent comprising an HFC refrigerant containing at least 40 wt% of R32 but containing no R134a refrigerant. See page 14, line 24, to page 15, line 11, and page 19, lines 15-20.

The fourth step (executed after the third step) is that of washing the existing refrigerant piping (6, 7) of the existing air conditioner (1) that used the existing refrigerant oil by circulating the new working refrigerant such that the existing refrigerant oil remaining in the existing refrigerant piping (6, 7) which is connected to the new heat source unit (102) and the oil collecting device (127) since the third step is carried along with the new working refrigerant during the circulating of the new working refrigerant. See page 15, lines 12-23. The fourth step also includes separating the existing refrigerant oil from the working refrigerant in order to remove the existing refrigerant oil from the existing refrigerant piping (6, 7). See page 15, lines 12-23.

***6. Grounds of Rejection to Be Reviewed on Appeal***

The following grounds of rejection are presented for review on Appeal:

- (A) Whether claim 7 is anticipated by Japanese Patent Publication No. 2002-357377 (Unezaki),
- (B) Whether claim 7 is anticipated by U.S. Patent No. 5,806,329 (Taira),
- (C) Whether claims 5, 6, 11 and 12 are unpatentable (obvious) over Unezaki in view of U.S. Patent No. 5,495,057 (Nam), and
- (D) Whether claims 5, 6, 11 and 12 are unpatentable (obvious) over Taira in view of Nam.

## 7. Arguments

Appellants respectfully submit that claim 7 is *not* anticipated by either Unezaki or Taira because each reference *fails* to disclose *each* and *every* element of the claim within the reference, as explained below. In addition, claims 5, 6, 11 and 12 are *not* obvious in view of the combination of Unezaki and Nam or the combination of Taira and Nam.

### GROUND OF REJECTION (A)-Claim 7

#### *NO ANTICIPATION:*

#### *UNEZAKI FAILS TO TEACH THE NEW WORKING REFRIGERANT OF CLAIM 7*

Independent claim 7 is rejected as being allegedly anticipated by Unezaki. Independent claim 7 requires a new heat source unit and a new user unit that are connected together by the existing refrigerant piping with a replaced working refrigerant disposed therein, *the replaced working refrigerant being an HFC refrigerant containing at least 40 wt% of R32 that serves as a cleaning agent but contains no R134a refrigerant*. Unezaki not only fails to teach use of such a refrigerant, but actually uses a refrigerant with a majority wt% R134a rather than none as set forth by claim 7 of the present application.

In Unezaki, R407C is used as both a washing agent (instead of the HCFC 141b and HCFC 225) and as a replacement refrigerant. R407C includes 23 wt% R32, 25 wt% R125 and 52 wt% R134a. Hence, R407C has less than 40 wt% R32 and a significant wt% (a majority) of R134a. See paragraphs [0012]-[0017] and [0044]-[0048]. Unezaki makes no mention of using an *HFC refrigerant containing at least 40 wt% of R32 but containing no R134a* as claimed. It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose *each* and *every* element of the claim within the reference. Since Unezaki does *not* teach using *HFC refrigerant containing at least 40 wt% of R32 but containing no R134a*, Unezaki cannot anticipate independent claim 7 under 35 U.S.C.

§102(a). Accordingly, withdrawal of this rejection based on Unezaki is respectfully requested.

In fact, the Office Action acknowledges that *HFC refrigerant containing at least 40 wt% of R32 but containing no R134a*, as claimed, is not disclosed or suggested by Unezaki. Specifically, the Office Action indicates on page 3 that Nam (used in the §103 rejection discussed below) teaches using such an HFC refrigerant, and that Unezaki is capable of using such an allegedly well-known refrigerant. The Examiner then states that “Unezake [sic] et al is capable to [sic] use R32 with at least 40 wt% without R134a as a cleaning agent having [sic] no obligation to invent the cleaning agent.” However, Appellants note that this rejection of claim 7 is a §102 rejection. Therefore, reliance on a second reference is improper. Unezaki cannot anticipate independent claim 7 under 35 U.S.C. §102(a). Accordingly, withdrawal of this rejection based on Unezaki is respectfully requested.

***NO ANTICIPATION:  
UNEZAKI FAILS TO TEACH THE NEW HEAT SOURCE UNIT OF CLAIM 7***

Independent claim 7 further requires *a new heat source unit that replaces the old heat source unit* and *an oil collecting device* that is *disposed in the new heat source unit*. The new heat source unit is used with existing (e.g., old, previously used) refrigerant piping. The Examiner asserts in the Office Action that the piping washing station 11 of Unezaki is the new heat source unit of the claims. This interpretation of the piping washing station as a new heat source of a “refurbished air conditioner” is *unreasonable*. In particular, the piping washing station 11 of Unezaki is removed after the washing operation, while the *actual* heat source of Unezaki is removed during the washing operation (see paragraph [0045]). On the other hand, the new source unit of claim 7 is part of the refurbished air conditioner that is not removed during or after the washing operation. The new heat source unit must be interpreted in conjunction with all limitations of claim 7. Therefore, the piping washing station 11 of Unezaki cannot be considered the new heat source unit of the claims directed to a refurbished

air conditioner. On page 8 of the Office Action, the Examiner argues that “The Unezaki et al and Taira et al are capable use [sic] a heat source whatever [sic] kind of they are [sic] either new or old.” Appellants respectfully believe that this statement is based merely on *impermissible hindsight* and does not establish a *prima facie* case of anticipation under United States patent law.

It is also asserted in the Office Action that the separation recovery system 9 of Unezaki is the oil collecting device of the claims. However, the separation recovery system 9 of Unezaki is disposed in the piping washing station 11. On the other hand, the oil collecting device of the claims is *disposed in the new heat source unit*. Since the piping washing station 11 cannot be properly interpreted as the new heat source of claim 7, the separation recovery system 9 of Unezaki cannot be considered the oil collecting device of claim 7. Moreover, the separation recovery system 9 is employed during the washing procedure (see paragraph [0044] and [0045] of Unezaki). As mentioned, during this washing procedure, the heat source is *removed* and the pipe washing apparatus is connected. The separation recovery system 9 *cannot* meet the requirements of the oil collecting device of the claims because the separation recovery system 9 is *not* disposed in the new heat source unit. For this reason also, withdrawal of the rejection based on Unezaki is respectfully requested.

#### **GROUND OF REJECTION (B)-Claim 7**

##### ***NO ANTICIPATION: TAIRA FAILS TO TEACH THE NEW WORKING REFRIGERANT OF CLAIM 7***

Independent claim 7 is rejected as being allegedly anticipated by Taira. In Taira, no particular washing liquid and/or new refrigerant are disclosed *whatsoever*. Rather, this reference discusses many details of the system, such as operating temperatures and pressures, *without reference to any particular washing/replacement refrigerant*. In fact, the Office Action acknowledges that *HFC refrigerant containing at least 40 wt% of R32 but containing no R134a*, as claimed, is not disclosed or suggested by Taira. Specifically, the

Office Action indicates on page 4 that Nam (used in the §103 rejection discussed below) teaches using such an HFC refrigerant, and that Taira is capable of using such an allegedly well-known refrigerant. However, this rejection of claim 7 is a §102 rejection. Therefore, reliance on a second reference is improper. Taira cannot anticipate independent claim 7 under 35 U.S.C. §102(b). Accordingly, withdrawal of this rejection based on Taira is respectfully requested.

***NO ANTICIPATION:  
TAIRA FAILS TO TEACH REUSE OF PIPING, AS IN CLAIM 7***

Independent claim 7 further requires that the *existing refrigerant piping* used before the update *be reused as is* after the update is completed in the claimed *refurbished air conditioner*. The Examiner asserts in the Office Action that the field piping 16, 17 of Taira is the existing refrigerant piping of the claims. However, as explained below, the field piping 16, 17 of Taira is *not* piping that was used with an existing air conditioner (prior to the update). Therefore, the field piping 16, 17 of Taira *cannot* be considered the existing refrigerant piping of the claims. Accordingly, withdrawal of this rejection based on Taira is respectfully requested.

It is asserted in the Office Action that the field piping 16, 17 of Taira contains residue of the existing refrigerant oil as in the claims. Appellants respectfully disagree. Taira is not directed to updating or refurbishing an existing air conditioner. Rather, Taira discloses a method of washing the pipes of a *new* air conditioner (one that still has manufacturing-related oils such as cutting oil, rolling oil, process oil, etc.). In column 1, Taira explains that these *manufacturing-related oils* are not compatible with the new, ozone-friendly HFC refrigerants. Accordingly, prior to use, the piping 16, 17 must be washed out. This piping 16, 17 is *new* piping for this *new*, unused air conditioner, and thus the limitations of claim 7 are not met.



To be clear, the residue in the refrigerant circuit of Taira is residue *other than refrigerant oil*, such as cutting oil, rolling oil, tube-expanding oil and process oil. See column 6, lines 9-15 of Taira. On the other hand, the existing refrigerant oil of claim 7 is the existing mineral-oil-based refrigerant oil of an already used air conditioner. Therefore, the field piping 16, 17 of Taira cannot be considered to contain residue of the existing refrigerant oil of the claims. For this reason as well, Taira fails to teach each and every limitation of claim 7.

The Examiner also asserts that the receiver 12 of Taira is the oil collecting device of the claims. However, the receiver 12 of Taira is a device that collects cutting oil, rolling oil, tube-expanding oil and process oil. On the other hand, the oil collecting device of the claims is a device that collects the existing mineral-oil-based refrigerant oil of an already used air conditioner because it is connected to the existing refrigerant piping. The Examiner is failing to consider the claim as a whole when interpreting claim terms such as “existing refrigerant piping.” Therefore, the receiver 12 of Taira cannot be considered the oil collecting device of the claims. For these various reasons, it should be clear that Taira fails to anticipate the subject matter of claim 7.

#### **GROUND OF REJECTION (C)-Claim 11**

##### ***NOT OBVIOUS: NAM DOES NOT CURE THE DEFICIENCIES OF UNEZAKI***

Independent claim 11 is a method claim directed to updating an air conditioning system by using existing piping and new heat source unit that has an oil separation device, which combats the problems of oil incompatibilities when switching parts of a system from older CFC/HCFC to newer HFC refrigerants. Claim 11 is rejected as being allegedly obvious in view of the combination of Unezaki and Nam. However, Nam is relied upon only for teaching *HFC refrigerant containing at least 40 wt% of R32 but containing no R134a*.

Even though Nam discloses this required refrigerant makeup, it would not have been obvious to employ Nam's teachings in the system of Unezaki.

First, as seen in paragraphs [0006] and [0007] of Unezaki, the issue of ozone depletion is already addressed by Unezaki. In fact, replacement of ozone depleting CFC and HCFC refrigerant with non-ozone depleting refrigerants such as R407C is the problem addressed and solved in Unezaki by using R407C. See also paragraphs [0011] and [013] in Unezaki. Thus, the alleged reason for using the refrigerant of Nam in the system of Unezaki, i.e., using a refrigerant which is environmentally friendly, is unsupported because the HFC refrigerants used in Unezaki do not deplete the ozone.

Second, Unezaki specifically teaches using a quite different refrigerant from that disclosed in Nam. Therefore one of ordinary skill in the art would not attempt to use the refrigerant of Nam in the face of *opposing* teachings from Unezaki. R407c uses a majority wt% R134a. On the other hand, the refrigerant of Nam has no R134a. The inquiry is not whether a person *could* have done it, but rather whether it would have been obvious for the person to do it. The Examiner has not provided an appropriate reason (rationale) that would have led a person of ordinary skill to make such a modification. For these reasons alone, the proposed combination of references is inadequate to render obvious the subject matter of independent claim 11.

Moreover, Nam fails to cure other aforementioned inadequacies of Unezaki with respect to the independent claims. Generally, most of the subject matter discussed above with respect to independent claim 7 is also presently recited in independent claim 11. Thus, as mentioned above, Unezaki fails to disclose the use of a new heat source unit as well as the oil collecting device disposed in the new heat source unit when updating is complete, as set forth in independent claim 11.

*The method of claim 11 is* refurbishing an air conditioner wherein a new heat source containing an oil collecting device is used with existing piping, and a new refrigerant is used that serves as both a cleaning agent and a replacement refrigerant while the new heat source unit is connected to the existing piping. Thus, the method solves the problem of incompatible refrigerant oils in a new way. The method of claim 11 is distinct from the washing method disclosed by Unezaki (see paragraphs [0045] and [0047]). The vapor-liquid phase refrigerant of Unezaki is moved at a high speed to shear off the old refrigerant oil from the pipe walls, as described in paragraph [0047]. In Unezaki, the washing is performed after removing the old heat source units by attaching the washing station and a bypass pipe. The washing of Unezaki is completed before the new units are ever attached to the system.

The difference in method is also attested to by *Unezaki's lack of a new heat source containing an oil collecting device*. As discussed above, the washing apparatus of Unezaki cannot properly be interpreted as the new heat source of the claims. Thus, Unezaki does not collect old refrigerant via an oil collecting device disposed in a new heat source during the washing process. The heat source of Unezaki is not even connected during the washing process (see paragraph [0045]). Accordingly, Unezaki could in *no way* have inspired a person of ordinary skill to reach the method of independent claim 11.

Therefore, even if someone attempted to substitute the refrigerant of Nam into Unezaki's method, the claimed method would not result since neither reference discloses or suggests the claimed method steps using the claimed structure as set forth in claim 11. Additionally, there is no evidence or teaching in the record that the refrigerant of Nam would even be compatible with *Unezaki's high-speed vapor-liquid shearing washing process* performed before connecting any new heat source units.

Finally, Appellants respectfully submit that, under U.S. patent law, the above standard given in the Office Action is not the standard for obviousness. In other words, an applicant

for patent need not prove “criticality” in order to receive a patent. Rather, the burden is on the Examiner to show that a claim is not novel either by anticipation or obviousness. A conclusory statement alone does not form an adequate basis (reason for modifying prior art) for an obviousness rejection. In this case, the reasoning of Office Action is generic and insufficient as a basis for obviousness.

For the above reasons, the combination of Unezaki and Nam does not render the subject matter of claim 11 obvious.

#### **GROUND OF REJECTION (D)-Claim 11**

##### ***NOT OBVIOUS: NAM DOES NOT CURE THE DEFICIENCIES OF TAIRA***

Independent claim 11 is a method claim directed to updating an air conditioning system by using existing piping and new heat source unit that has an oil separation device, which combats the problems of oil incompatibilities when switching parts of a system from older CFC/HCFC to newer HFC refrigerants. Claim 11 is rejected as being allegedly obvious in view of the combination of Taira and Nam. However, Nam is relied upon only for teaching ***HFC refrigerant containing at least 40 wt% of R32 but containing no R134a***. Like Unezaki, Taira uses an ozone-friendly HFC refrigerant, but in a new system (no existing piping). Thus, as with Unezaki, there is no ozone depletion problem in Taira, which would cause one of ordinary skill in the art to look toward Nam as asserted in the Office Action, as explained above in the arguments in response to grounds of rejection (C).

Also, as explained above in the discussion of grounds of rejection (B), the residue in the refrigerant circuit of Taira is residue ***other than refrigerant oil***, such as cutting oil, rolling oil, tube-expanding oil and process oil. See column 6, lines 9-15 of Taira. On the other hand, the ***existing refrigerant oil*** of claim 11 is the existing mineral-oil-based refrigerant oil of an already used air conditioner. Therefore, the field piping 16, 17 of Taira cannot be considered to contain residue of the existing refrigerant oil of the claims. For this reason as

well, Taira fails to disclose or suggest each and every limitation of the method of updating an air conditioner set forth in claim 11.

As explained above, Taira fails to disclose the *reuse of piping* from an already used air conditioner. The air conditioner being washed in Taira is a *new* air conditioner, and the addition of Nam would not cure this deficiency with respect to the method of claim 11. Thus, the combination of Taira and Nam fails to render obvious the limitations of method claim 11 regarding the reuse of old piping.

Also, there could be no *new* heat source unit replacing an old heat source unit because, as mentioned, the air conditioner of Taira is a new air conditioner. Furthermore, there is no disclosure of an oil collecting device *disposed in* a new heat source unit. For all of these reasons, the combination of Taira and Nam is inadequate to establish a *prima facie* case of obviousness.

**8. Conclusion**

In view of the above analysis of claims 5-7, 11 and 12, Appellants believe that claims 5-7, 11 and 12 are patentable over Japanese Patent Publication No. 2002-357377 (Unezaki), U.S. Patent No. 5,495,057 (Nam), and U.S. Patent No. 5,806,329 (Taira), whether taken singularly or in combination. Thus, Appellants respectfully requests that the rejections discussed above be reversed, and that claims 5-7, 11 and 12 be allowed. If there are any questions regarding this Brief, please feel free to contact the undersigned.

Respectfully submitted,

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### *A- Claims Appendix*

5. The conditioner updating method recited in claim 11, further comprising a fifth step of changing over a refrigerant circuit being composed of the existing refrigerant piping with the new heat source unit and the new user unit to normal operation state which has the oil collecting device attached thereto, the fifth step being executed after the fourth step.

6. The air conditioner updating method recited in claim 12, further comprising a fifth step of changing over a refrigerant circuit being composed of the existing refrigerant piping with the new heat source unit and the new user unit to normal operation state which has the oil collecting device attached thereto, the fifth step being executed after the fourth step.

7. A refurbished air conditioner comprising:  
existing refrigerant piping that was used with an existing air conditioner being composed of an old heat source unit and an old user unit and contains residue of an existing mineral-oil-based refrigerant oil, the existing refrigerant piping being connected the old heat source unit and the old user unit, the existing refrigerant piping being reused as is when updating the air conditioner is complete;

a new heat source unit and a new user unit that are connected together by the existing refrigerant piping with a replaced working refrigerant disposed therein, the new heat source unit and the new user unit replacing the old heat source unit and the old user unit when updating the air conditioner is complete; and

an oil collecting device that is configured such that after the existing refrigerant oil has been changed and before the refurbished air conditioner is run in a normal operating mode, the oil collecting device can draw in the replaced working refrigerant that is being circulated through the air conditioner and separate the existing refrigerant oil that is carried with the replaced working refrigerant, the oil collecting device being disposed in the new heat source unit, the oil collecting device includes an oil collecting container, an inlet pipe, an inlet valve, and an outlet pipe therein,

the replaced working refrigerant being an HFC refrigerant containing at least 40 wt% of R32 that serves as a cleaning agent but contains no R134a refrigerant.

11. An air conditioner updating method comprising steps of:

a first step of recovering a working refrigerant containing an existing mineral-oil-based refrigerant oil from an existing air conditioner;

a second step of replacing selected old equipment constituting at least a portion of the existing air conditioner including an old heat source unit and an old user unit while reusing as is at least a portion of existing refrigerant piping of the existing air conditioner when updating the air conditioner is complete, the existing refrigerant piping being connected to a new heat source unit, an oil collecting device, and a new user unit, the oil collecting device being disposed in the new heat source unit when updating the air conditioner is complete, the second step being executed after the first step;

a third step of charging the existing air conditioner which is connected to the new heat source unit and the oil collecting device with the existing refrigerant piping since the second step and that has the equipment updated with a new working refrigerant that serves as a cleaning agent comprising an HFC refrigerant containing at least 40 wt% of R32 but containing no R134a refrigerant, the third step being executed after the second step; and



a fourth step of washing the existing refrigerant piping of the existing air conditioner that used the existing refrigerant oil by circulating the new working refrigerant such that the existing refrigerant oil remaining in the existing refrigerant piping which is connected to the new heat source unit and the oil collecting device since the third step is carried along with the new working refrigerant during the circulating of the new working refrigerant, and separating the existing refrigerant oil from the working refrigerant in order to remove the existing refrigerant oil from the existing refrigerant piping, the fourth step being executed after the third step.

12. The air conditioner updating method recited in claim 11, wherein during the washing of the existing refrigerant piping, the new working refrigerant is circulated such that the new working refrigerant in a wet state flows through the existing refrigerant piping.

***B- Evidence Appendix***

None - Appellants are not relying on any additional evidence in this appeal of the above-identified patent application other than the present record.

***C- Related Proceeding Appendix***

None - Since Appellants are not aware of any appeals or interferences relating to the above-identified patent application, there are no decisions rendered by a court or the Board that are required to be submitted herewith.